In the Claims

1. (currently amended)   A method of transporting packet voice and data traffic over a low bandwidth upstream communication path from a subscriber location, the method comprising performing at the subscriber location the steps of:- generating a first internet protocol (IP) packet stream carrying the voice traffic; generating a second IP packet stream carrying the data traffic; segmenting said first and second IP packet streams into respective first and second ATM cell streams; and multiplexing said first and second ATM cell streams together for transport over said upstream communication path.

2. (currently amended)   A method as claimed in claim 1, wherein said upstream communication path comprises a telephone subscriber loop.

3. (original)   A method as claimed in claim 2, wherein said subscriber loop carries a asymmetric digital subscriber line (ADSL) service.

4. (original)   A method as claimed in claim 3, wherein said first and second cell streams are adaptation layer five (AAL5) cell streams.

5. (original)   A method as claimed in claim 4, wherein said first and second cell streams are re-assembled into respective voice and data packets for transport over an IP network.

6. (original)   A method as claimed in claim 5, wherein said voice packets are routed within the IP network to one or more gateways providing access to a PSTN.

7. (original)   A method as claimed in claim 6, wherein each said voice packet is provided with a compressed header.

8. (original)   A method as claimed in claim 7, wherein compressed header packets directed at a common gateway are embedded in an IP packet having a full header.

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9. (original)   A method as claimed in claim 7, wherein compressed header packets directed at a common gateway are embedded in a single ATM virtual circuit.

10 to 14. (cancelled)

15. (currently amended)   A subscriber station for providing digital communication with an access multiplexer over a subscriber loop, the subscriber station incorporating means for generating a first IP packet stream comprising digitally encoded voice traffic and a second IP packet stream comprising data traffic, means for segmenting said first and second IP packet streams into respective first and second ATM cell streams, and multiplexing means for multiplexing said first and second ATM cell streams together for transport to the access multiplexer over said subscriber loop.

16. (new)   A method of transporting packetised delay sensitive and delay insensitive traffic on a low bandwidth, upstream communications path from a subscriber location, said method comprising performing at the subscriber location the following steps:-

generating a first packet stream carrying the delay sensitive traffic according to a first packet protocol;

generating a second packet stream carrying the delay insensitive traffic according to said first packet protocol;

segmenting said first and second packet streams to form respective first and second packet streams in accordance with a second packet protocol;

multiplexing said first and second packets streams formed in accordance with said second packet protocol for transport over the upstream communications path, wherein said second packet protocol has a packet length that is smaller than that of the first packet protocol.

17. (new)   A method according to claim 16, wherein the first packet protocol is the Internet Protocol (IP) and the second protocol is the Asynchronous Transfer Mode (ATM) protocol.

18. (new)   A method according to claim 16, wherein said upstream communication path is a subscriber loop carrying an asymmetric digital subscriber line (ADSL) service.

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19. (new) A method according to claim 18, wherein said first packet stream comprising said delay sensitive traffic comprises digitally encoded voice traffic and said second packet stream comprising said delay insensitive traffic comprises data traffic.

20. (new) A method according to claim 19, wherein each voice packet comprising the digitally encoded voice traffic is provided with a compressed header.

21. (new) A subscriber installation for providing digital communication with an access multiplexer over a low bandwidth, upstream communication path, comprises:-

means for generating a first packet stream comprising delay sensitive traffic, said first packet stream being generated in accordance with a first packet protocol;

means for generating a second packet stream in accordance with said first packet protocol comprising delay insensitive traffic;

means for segmenting said first and second packet streams in accordance with a second packet protocol;

a multiplexer for multiplexing said first and second cell streams for transport over said upstream communications path,

wherein the first packet protocol has a packet length greater than that of the second packet protocol.

22. (new) A subscriber installation according to claim 21, wherein the first packet protocol is IP and the second packet protocol is ATM.

23. (new) A subscriber installation according to claim 21, wherein the upstream communications path comprises a subscriber loop carrying an ADSL service.